UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,262	03/13/2001	Mark Fimoff	7174B	9117

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EXAMINER
NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)	
Office Action Summary	09/804,262	FIMOFF, MARK	
	Examiner	**Art Unit**	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _27 March 2003_ .

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-101_ is/are pending in the application.

    4a) Of the above claim(s) _1-77_ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _78-101_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claim(s) _1-77_ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Election/Restrictions

1.   Restriction to one of the following inventions is required under 35 U.S.C.

121:

     I.   Claims **1-77** are drawn to method and apparatus of receiving digital

        signals containing VSB data, classified in class 375, subclass 321.

     II.   Claims **78-101** are, drawn to method and apparatus of transmitting

        and receiving a frame having first and second field each having a

        frame sync segment and a plurality of data segments, classified in

        class 375, subclass 295.

2.   The inventions are distinct, each from the other because of the following

reasons: Inventions I and II are related as subcombinations disclosed as usable

together in a single combination. The subcombinations are distinct from each

other if they are shown to be separately usable. In the instant case, invention II

has separate utility such as in a standard ATSC television receiver which does

not require or use amplitude modulation techniques. See MPEP § 806.05(d).

3.   Because these inventions are distinct for the reasons given above and

have acquired a separate status in the art as shown by their different

classification, restriction for examination purposes as indicated is proper.

4.   During a telephone conversation with **Trevor Joike** on July 28,2003 a

provisional election was made without traverse to prosecute the invention of the

elected group, claims **78-101**. Affirmation of this election must be made by

applicant in replying to this Office action. Claims **1-77** have been withdrawn from

further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a

non-elected invention.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

6.   Claims **78-101** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Willming, U.S. Pat. No. 5,629,958.

Considering claim **78**, Willming discloses the following claimed subject matter,

note;

a) receiving a current frame comprising a frame sync segment and a plurality of
                                40
data segments, is met by the Receiver in Fig.2a. (see Abstract)
                                  CCT

b) wherein the current frame contains a current map indicating a location of data

in a first frame... is met by the Mapper and Sync Inserter 34, which encodes the
signal

map (shown in Figs.3,5, and 23) and decoded by the receiver. (see also

Abstract)

c) processing the data in the first frame in response to the current map is met by

the viterbi decoder 44 and 46, fig.2A

      Except for;

d) a next map indicating a location of data in a second frame, and a count

indicating the number of frames until the next map becomes the current map,

      Regarding d), Willming doesn't specifically disclose a next map Indicating

location of data in the second frame. However, it would have been obvious to

the skilled in the art at the time the invention was made to implement the system

of Willming because a next map would include the location of data in a second

frame, since the location of data in current frame has already been mapped or

indicated.

Considering claim **79**, the method of claim 78 wherein the current map, the next

map, and the count are contained in the same segment of the current frame.

      See rejection of claim 78 (a),(b) and (d).

Considering claim **80**, the method of claim 79 wherein the segment containing

the current map, the next map, and the count comprises a data segment of the

current frame, is met by the disclosure that "One of the data segments of each

frame comprises a frame sync segment of which the last 12 symbols comprise a

copy of the last 12 encoded data symbols of the preceding data segment." (see

Abstract)

Considering claim **81**, the method of claim 78 further comprising: maintaining a

count related to when the next map will change to the current map; and, counting

down from the count based on frame times, is implied because without counter

counting up or down as the data arrive at the receiver the processor or controller

would not be able to maintain control.

Considering claim **82**, the method of claim 81 wherein the current map, the next

map, and the count are contained in the same segment of the current frame.

See rejection of claim 80.

Considering claim **83**, the method of claim 82 wherein the segment containing

the current map, the next map, and the count, comprises a data segment of the

current frame.

See rejection of claim 80.

Considering claim **84**, the method of claim 78 wherein the first frame is the

current frame, and wherein the second frame is a future frame, is implied

because the second frame comes after the first frame.

Considering claim **85**, Willming discloses the following claimed subject matter, note;

a) inserting a current map, a next map, and a count into the current frame, wherein the current map indicates a location of data in a first frame, , is met by the mapper and sync inserter 34, fig.2A.

b) transmitting the current frame, is met by the transmitter, Fig.2A;

Except for;

C) wherein the next map indicates a location of data in a second frame, and wherein the count indicates the number of frames until the next map becomes the current map;

Regarding c), see rejection of claim 78(d).

Considering claim **86**, the method of claim 85 wherein the current map, the next map, and the count are contained in the same segment of the current frame.

See rejection of claim 79;

Considering claim **87**, the method of claim 86 wherein the segment containing the current map, the next map, and the count comprises a data segment of the current frame.

See rejection of claim 80.

Considering claim **88**, the method of claim 85 wherein the first frame is the current frame, and wherein the second frame is a future frame.

See rejection of claim 84.

Considering claim **89**, Willming discloses the following claimed subject matter, note;

a) receiving a frame comprising first and second fields each having a frame sync segment and a plurality of data segments, is met by the Receiver in Fig.2a. (see Abstract)

b) wherein the first field contains a current map and count information, wherein the second field contains a next map and count information... is met by the Mapper and Sync Inserter 34, which encode the map (shown in Figs.3,5, and 23) and decoded by the receiver. (see also Abstract)

c) processing data in the current frame in response to the current map, is met by viterbi decoder 44, fig.2a.

Except for;

d) wherein the current map indicates location of data in a current frame, wherein the next map indicates location of data in a future frame, and wherein the count information indicates the number of frames until the next map becomes the current map;

Regarding d), see rejection of claim 78(d).

Considering claim **90**, the method of claim 89 wherein the current map and count

information are contained in the same segment of the first field, and wherein the

next map and count information are contained in the same segment of the

second field.

See rejection of claim 80.

Considering claim **91**, the method of claim 90 wherein the segment containing

the current map and count information comprises a data segment, and wherein

the segment containing the next map and count information comprises a

data segment.

See rejection of claim 80.

Considering claim **92**, the method of claim 89 further comprising: maintaining a

count related to when the next map will change to the current map; counting

down from the count based on frame times.

See rejection of claim 81.

Considering claim **93**, the method of claim 92 wherein the current map and count

information are contained in the same segment of the first field, and wherein the

next map and count information are contained in the same segment

of the second field.

See rejection of claim 89;

Considering claim **94**, the method of claim 93 wherein the segment containing the current map and count information comprises a data segment, and wherein the segment containing the next map and count information comprises a data segment.

See rejection of claim 80.

Considering claim **95**, the method of claim 89 wherein the current map further indicates a coding rate for at least a portion of the data in the current frame, and wherein the next map further indicates a coding rate for at least a portion of the data in the future frame.

Regarding claim 95, Willming does not specifically disclose coding rate for the data in the frames. However, Willming teaches that "Each k bits of an input data stream is converted to k+n output bits by a rate k/(k+n) state-dependent sequential convolution encoder 10. Each group of (k+n) output bits is then mapped to one of 2.sup.(k+n) symbols by a mapper 12." (col. 1, lines 28-33) Willming further discloses that "Uncoded bit Y1 from precoder 32a is applied to a rate 1/2, 4-state, systematic feedback convolution encoder 32b for conversion to output bits Z.sub.1 and Z.sub.0." (col. 4, lines 46-54)

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Willming by specifically providing the coding rate in the header packet in order to make it easier for the receiver to recognize and process the transmitted data.

Considering claim **96**, the method of claim 89 wherein the current map further

indicates at least first and second coding rates corresponding to at least first and

second portions of the data in the current frame, and wherein the next map

further indicates at least first and second coding rates corresponding to at least

first and second portions of the data in the future frame.

See rejection of claim 95.

Considering claim **97**, Willming discloses the following claimed subject matter,

note;

a) inserting a current map and count information into the first field, wherein the

current map indicates location of data in a current frame, inserting a next map

and count information into the second field, is met by Mapper and sync Inserter

34, fig. 2A;

c) transmitting the first and second fields of the frame, is met by transmitter

Fig.2A.

Except for;

b) wherein the next map indicates location of data in a future frame, and wherein

the count information indicates the number of frames until the next map becomes

the current map;

Regarding b), see rejection of claim 78 (d);

Considering claim **98**, the method of claim 97 wherein the current map and count information are contained in the same segment of the first field; and wherein the next map and count information are contained in the same segment of the second field.

      See rejection of claim 80.

Considering claim **99**, the method of claim 97 wherein the segment containing the current map and count information comprises a data segment of the first field, and wherein the segment containing the next map and count information comprises a data segment of the second field.

      See rejection of claim 80.

Considering claim **100**, the method of claim 97 wherein the current map further indicates a coding rate for at least a portion of the data in the current frame, and wherein the next map further indicates a coding rate for at least a portion of the data in the future frame.

      See rejection of claim 95.

Considering claim **101**, the method of claim 97 wherein the current map further indicates at least first and second coding rates corresponding to at least first and second portions of the data in the current frame, and wherein the next map further indicates at least first and second coding rates corresponding to at least first and second portions of the data in the future frame.

See rejection of claim 95.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Lyons et al., U.S. Pat. No. 5,903,324 discloses a transport processor interface for

a digital television system.

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Paulos M. Natnael whose telephone number

is (703) 305-0019. The examiner can normally be reached on 6:30am -3pm.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax

phone numbers for the organization where this application or proceeding is

assigned are (703) 872-9314 for regular communications and (703) 872-9314 for

After Final communications.

Any inquiry of a general nature or relating to the status of this application

or proceeding should be directed to the receptionist whose telephone number is

(703) 305-4750.

Paulos Natnael
October 16, 2003

MICHAEL H. LEE
PRIMARY EXAMINER